

WHAT IS CLAIMED IS:

1. A gas discharge display device, comprising:  
a gas discharge display portion for generating gas discharge by using a gas containing at least either neon or helium, and for displaying a color image by making a first, a second, and a third phosphor having different light-emitting colors emit light; and

an optical filter portion provided to overlap an entire display screen on a front surface of a gas discharge space, wherein

said optical filter portion includes an absorption region for selectively absorbing a light between 550 nm of wavelength and 620 nm of wavelength, and a width  $W_H$  in the absorption region of a half-width transmittance  $T_H$  ( $T_H = (T_P + T_V) / 2$ ) between a transmittance  $T_P$  at an absorption peak in the absorption region and an average transmittance  $T_V$  in a visible light region is 30 nm or more.

2. The gas discharge display device according to claim 1, wherein

said optical filter portion is so adjusted that a half-width region width in the transmittance  $T_{550}$  at the wavelength of 550 nm and the transmittance  $T_{620}$  at the wavelength of 620 nm is 20 nm or more.

3. The gas discharge display device according to claim 1, wherein

said gas discharge display portion has a peak of the wavelength emitted by the first phosphor within a

range of 523 nm to 538 nm, and peaks of the wavelengths emitted by the second phosphor within ranges of 589 nm to 595 nm, 607 nm to 613 nm, and 623 nm to 629 nm.

4. The gas discharge display device according to claim 1, wherein

said optical filter portion is constituted by including an optical film and a transparent substrate for protecting said gas discharge display portion, being provided on a front surface of the optical film.

5. The gas discharge display device according to claim 4, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by tightly cohering with said gas discharge display portion.

6. The gas discharge display device according to claim 4, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by alienating from said gas discharge display portion.

7. The gas discharge display device according to claim 4, wherein

the optical film is provided by alienating from the transparent substrate, and by tightly cohering with said gas discharge display portion.

8. The gas discharge display device according to claim 4, wherein

the optical film is made of organic resin in which a substance for absorbing a light of a specific wavelength is dispersed.

9. The gas discharge display device according to claim 1, wherein

an anti-reflection film is provided on a front surface of said optical filter portion.

10. A gas discharge display device, comprising:  
a gas discharge display portion for generating gas discharge by using a gas containing at least either neon or helium, and for displaying a color image by making a first, a second, and a third phosphor having different light-emitting colors emit light; and

an optical filter portion provided to overlap an entire display screen on a front surface of a gas discharge space, wherein

said optical filter portion includes an absorption region for selectively absorbing a light between 550 nm of wavelength and 620 nm of wavelength, and a transmittance  $T_p$  at an absorption peak in the absorption region is within a range of 20% to 60% of an average transmittance  $T_v$  in a visible light region.

11. The gas discharge display device according to claim 10, wherein

said optical filter portion is so adjusted that a half-width region width in the transmittance  $T_{550}$  at the wavelength of 550 nm and the transmittance  $T_{620}$  at the wavelength of 620 nm is 20 nm or more.

12. The gas discharge display device according to claim 10, wherein

said gas discharge display portion has a peak of the wavelength emitted by the first phosphor within a range of 523 nm to 538 nm, and peaks of the wavelengths emitted by the second phosphor within ranges of 589 nm to 595 nm, 607 nm to 613 nm, and 623 nm to 629 nm.

13. The gas discharge display device according to claim 10, wherein

said optical filter portion is constituted by including an optical film and a transparent substrate for protecting said gas discharge display portion, being provided on a front surface of the optical film.

14. The gas discharge display device according to claim 13, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by tightly cohering with said gas discharge display portion.

15. The gas discharge display device according to claim 13, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by alienating from said gas discharge display portion.

16. The gas discharge display device according to claim 13, wherein

the optical film is provided by alienating from the transparent substrate, and by tightly cohering with said gas discharge display portion.

17. The gas discharge display device according to claim 13, wherein

the optical film is made of organic resin in which a substance for absorbing light of a specific wavelength is dispersed.

18. The gas discharge display device according to claim 10, wherein

an anti-reflection film is provided on a front surface of said optical filter portion.

19. A gas discharge display device, comprising:  
a gas discharge display portion for generating gas discharge by using a gas containing at least either neon or helium, and for displaying a color image by making a first, a second, and a third phosphor having different light-emitting colors emit light; and

an optical filter portion provided to overlap an entire display screen on a front surface of a gas discharge space, wherein

said optical filter portion includes an absorption region for selectively absorbing a light between 550 nm of wavelength and 620 nm of wavelength, and an average transmittance  $T_{AC}$  between 550 nm of wavelength and 620 nm of wavelength is within a range of 60% to 85% of an average transmittance  $T_v$  in a visible light region.

20. The gas discharge display device according to claim 19, wherein

said gas discharge display portion has a peak of the wavelength emitted by the first phosphor within a range of 523 nm to 538 nm, and peaks of the wavelengths emitted by the second phosphor within ranges of 589 nm to 595 nm, 607 nm to 613 nm, and 623 nm to 629 nm.

21. The gas discharge display device according to claim 19, wherein

said optical filter portion is constituted by including an optical film and a transparent substrate for protecting said gas discharge display portion, being provided on a front surface of the optical film.

22. The gas discharge display device according to claim 21, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by tightly cohering with said gas discharge display portion.

23. The gas discharge display device according to claim 21, wherein

the optical film is provided by tightly cohering with the transparent substrate, and by alienating from said gas discharge display portion.

24. The gas discharge display device according to claim 21, wherein

the optical film is provided by alienating from the transparent substrate, and by tightly cohering with said gas discharge display portion.

25. The gas discharge display device according to claim 21, wherein

the optical film is made of organic resin in which a substance for absorbing light of a specific wavelength is dispersed.

26. The gas discharge display device according to claim 19, wherein

an anti-reflection film is provided on a front surface of said optical filter portion.